

Winter 2003 TCS/CS Project Course

Number and Title: CS 6899 Project

Quarter: Winter 2003

Meeting Time: MW 6-7:50 pm

Instructor: Christopher Morgan

This course is designed to serve TCS grad students, but can also be taken by really bright and dedicated CS graduate students. Admission is restricted to those who have approval of their advisor and the instructor. For CS students this normally means that they have completed most of their degree requirements and are almost ready to graduate. For CS students units can be counted toward elective units if the student receives prior approval from the CS Graduate Committee. For TCS students this course is designed to satisfy requirements for a capstone experience. Priority will be given to eligible TCS students. Enrollment is limited to 25.

The course will explore software development from a real world perspective, using an ongoing project from the real world - development of software for remote access to visual and analytic scientific equipment. Particular instrumentation includes a XL 40 scanning electron microscope, located in the Microscope and Graphics Imaging Center (MAGIC) at CSU Hayward and the analytic equipment, including an HPLC, an AA, and a GS/MS, located in the RAISE lab in the Chemistry Department.

The course has four phases: 1) analysis, 2) design, 3) implementation, and 4) testing and integration

1. During stage 1, students will learn about and engage in high-level planning, including the writing of business plans and/or grant proposals.
2. During stage 2, students will learn about and engage in software systems design, including the development of a) use case diagrams, descriptions, and scenarios b) sequence diagrams, c) class and object diagrams.
3. During stage 3, students will develop code and documentation for specific modules, including database, image transmission, scheduling, monitoring, and instrument control. Students will write in English, SQL, PHP, Perl, Java, JavaScript, C, and C++ as appropriate.
4. During stage 4 (as time permits), students will test and bring together components as part of the entire system. They will analyze the performance and suitability of components and the entire system.

The course will consist of project and team meetings, workshops, presentations, and hands-on experience. Students will work in teams of two. Students will be expected to work about 15 hours per week, including the 4 classroom hours. There are no exams, but the delivery of several reports (including a final report) and software programs will be required. Oral reports and presentations will also be required. TCS students using this as their capstone experience will be expected to write a fifty-page paper as their final report. All reports must be carefully proofread before submission.

Please contact Dr. Christopher Morgan (x3456, cmorgan@csuhayward.edu) for more information or if you would like a tour of the MAGIC facilities.